

House Select Committee on Rural and Urban High Speed Access Round 2 BTOP

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February 22nd, 2010

Framing the Broadband House

- One stated goal of the 1996 Telecommunications Act is to ensure that consumers “in rural, insular, and high-cost areas, should have access to telecommunications and information services . . . at rates that are reasonably comparable to rates charged for similar services in urban areas” (U.S. Congress 1996, § 254 (b) (3)).
- Communities with new access to broadband experienced 6.4 percent higher employment growth - on average than before they had broadband.

Where Jobs Come From, The Role of Innovation, Investment, and Infrastructure in Economic and Job Growth. By Jessica Milano, February 2010.



Framing the Broadband House

Broadband access is not a panacea but it is:

- Equity of Education across K20
- Modern healthcare
- Economic development
- Civic participation
- A flexible infrastructure that can be leveraged by citizens for the benefit of health, education, prosperity and civic engagement
- Less expensive to deploy



Why the Middle Mile?

“Middle-mile infrastructure is essential for bringing broadband to communities that were previously isolated or had only rudimentary connections. By lowering the cost of last-mile connections, investments in the middle mile allow Internet service providers to enter the market and build connections to homes and business...”

White House National Economic Council, 12/2009

The Future

- Today FCC defines broadband as 768K down and 250K up today
 - Will not support most eLearning content reliably
 - Will not support high def video
 - Middle mile and last mile lacking



Bandwidth needs

These happen simultaneously in most households

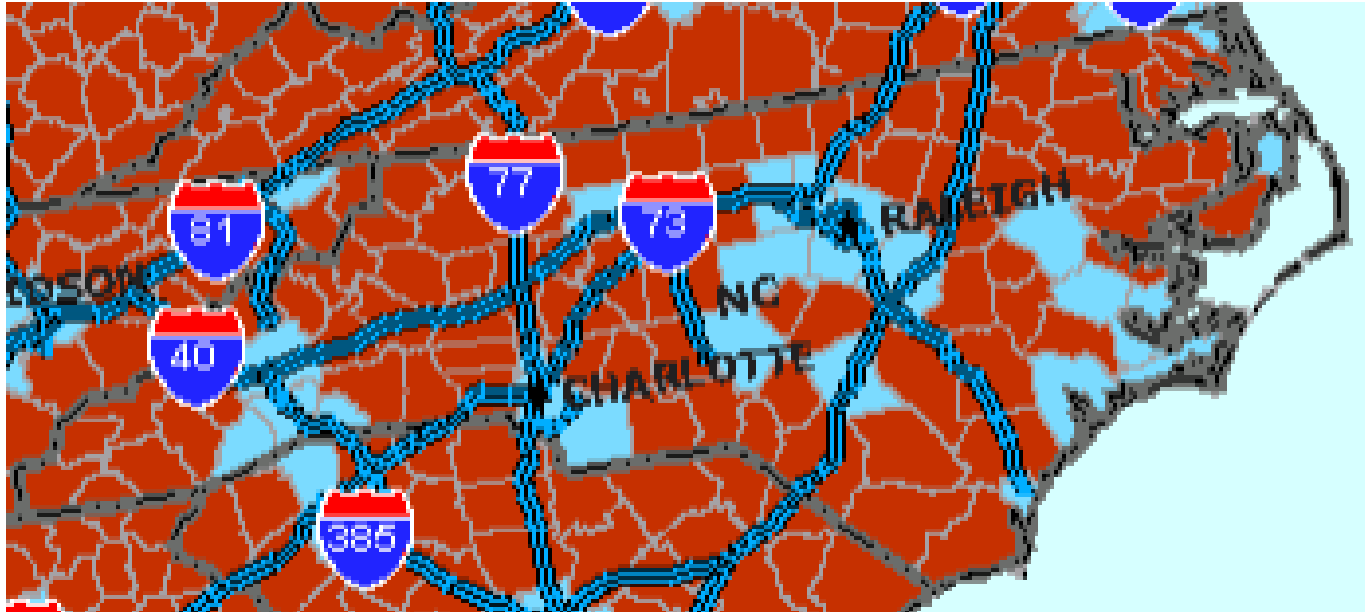
TABLE 1: BANDWIDTH REQUIREMENTS FOR BROADBAND APPLICATIONS

Application	Upstream Speed	Downstream Speed
Medium-Resolution Videoconferencing (640x480P)	384-1200 Kbps	384-1200 Kbps
Streaming Video (720P)		1.2 - Mbps
Standard-Definition Digital Television (720x480 Interlaced)		4 Mbps
Basic HD Videoconferencing (1280x720 resolution)	1.2 - 4 Mbps	1.2 - 4 Mbps
Telepresence: High-Resolution HD Videoconferencing (1920x1080 resolution)	5 Mbps	5 Mbps
Video Home Security Service	10 Mbps	
High-Definition (HD) Digital Television (1440x1080 Interlaced)		15 Mbps
Telepresence: Very High-Resolution HD Videoconferencing (5760x1080)	15 Mbps	15 Mbps

The Need for Speed, Ezell, Atkinson, Castro and Ou - 2009



Situation



Red = Economically Distressed Areas (EDAs) are areas where:

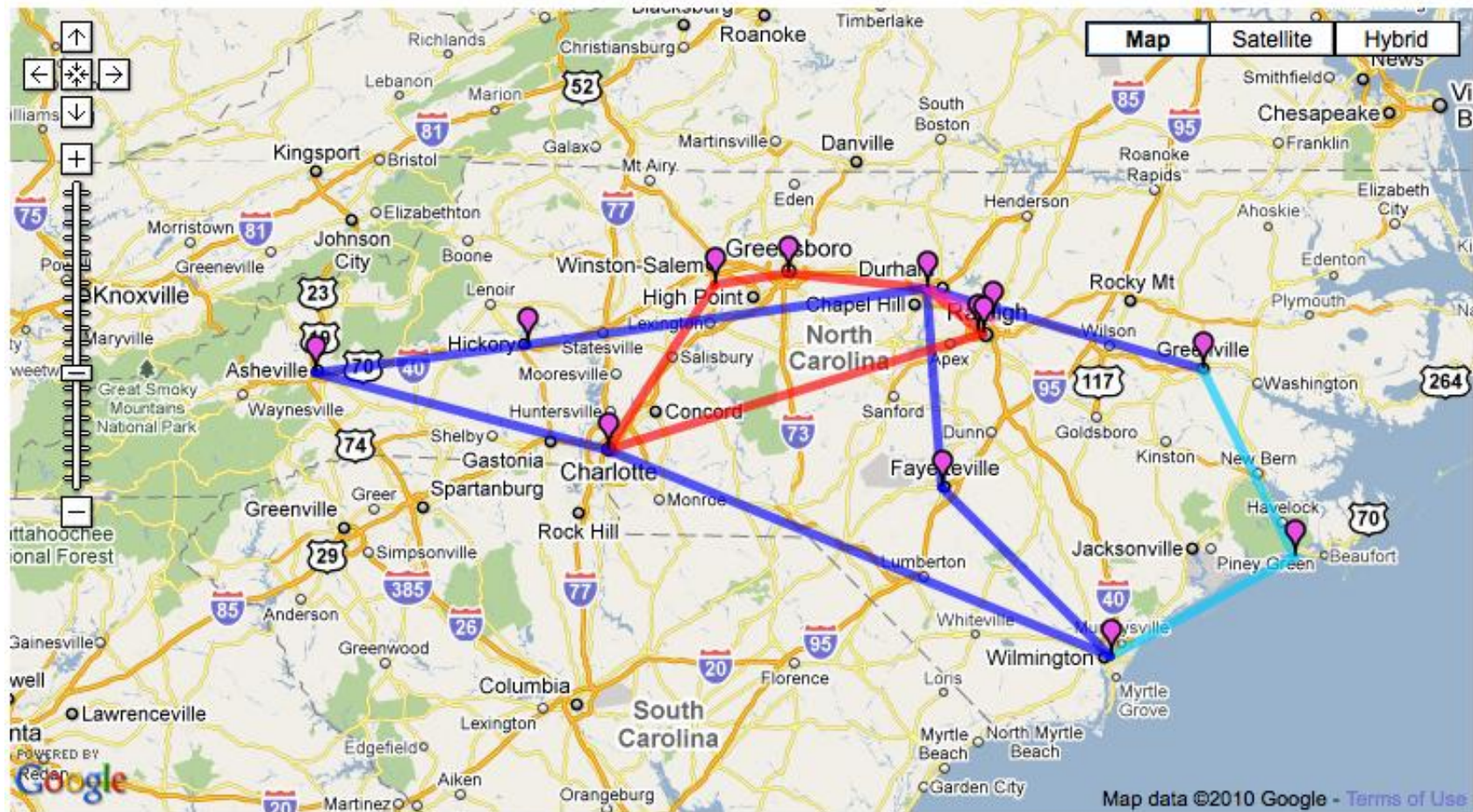
- the unemployment is 1% or more above the national average
- the per capita income is 80% or less than the national average.

Federal Stimulus

- ARRA provides \$7.2B to enhance broadband access
 - \$4.5 B to Commerce BTOP
 - \$2.7 B to Agriculture RUS
- Why did MCNC apply?
 - Build on an existing asset – not build from scratch
 - Leasing bandwidth in rural areas no longer feasible
 - Equity of education
 - No dark fiber made available
 - Underserved consumers

MCNC Operates NCREN

North Carolina Research and Education Network



Round 1 – MCNC Application

- \$28.2M request, \$11.7M match
 - \$7.7M From MCNC Endowment
 - \$4M From Private Partner
- 37 Rural Counties – 24 fully or partially underserved
 - Private partner reaches last mile consumers
- Round 1 Results: MCNC Won

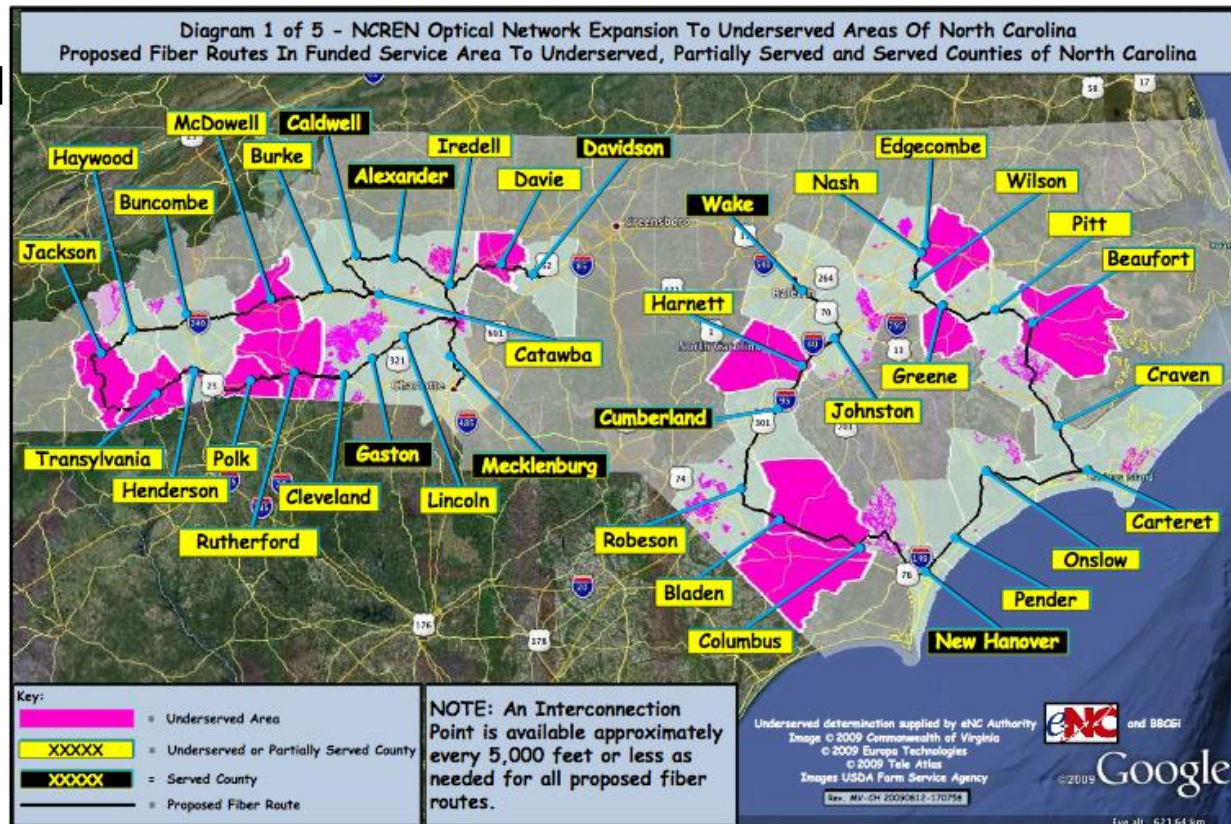
Round 1 Financial Return

(THOUSANDS)

	Lease	Ownership IRU	Permanent
Projected Use	\$85,360	\$23,839 Not Available to MCNC	\$39,900 (Capital, O&M and refresh)

* Round 1 Award – Covered \$28.7M of the capital

Middle Mile Build



Underserved Total:

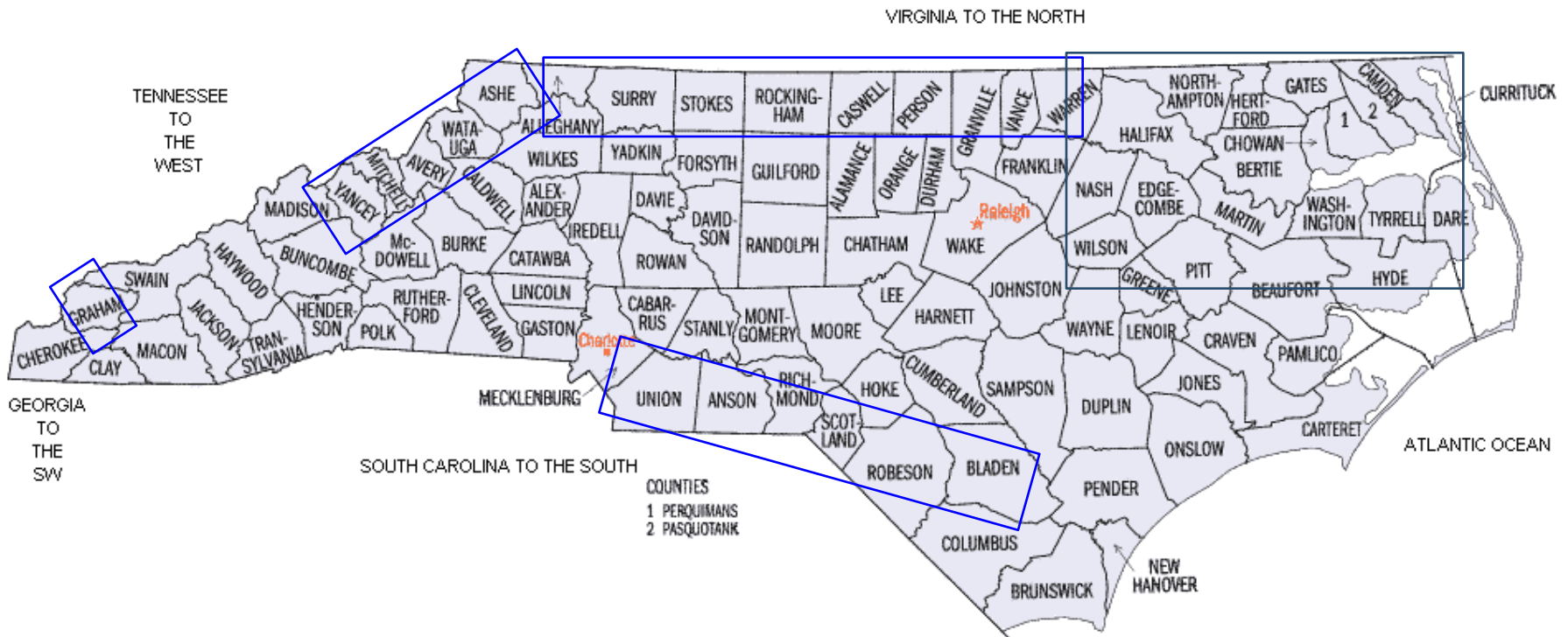
Beaufort
Bladen
Columbus
Davie
Edgecombe
Greene
Harnett
Jackson
McDowell
Polk
Rutherford
Transylvania

Underserved Partial:

Carteret
Craven
Johnston
Onslow
Pender
Roberson
Buncombe
Catawba
Cleveland
Haywood
Iredell
Lincoln



BTOP Round 2-Potential Areas



Challenges Round 2

- Commercial viability lacking
 - Fiber is not as valuable to private sector
- Sustainability of public part of the network
 - MCNC existing customer base
- ROI not as simple as round 1
- Direct fiber to community anchor institutions
- MCNC endowment tapped

Round 2: Proposal

- \$93.3M for 1000+ Miles of fiber
 - \$28M to meet 30% match
- 4 Underserved areas remain
 - Northeast
 - North Central
 - Northwest
 - South Central
- Direct fiber to community anchor institutions
 - Community Colleges and Libraries
 - Covers existing contracts to sustain the network
- Half of counties already submitted letters of support

Round 2 Service providers

- Areas lack commercial viability
- Open discussions again on IRU
 - No firm commitments at this point
- Do not overbuild where we know its available
 - Including direct fiber to Community Anchors
- Does hesitancy to IRU mean lack of availability?
- Need to focus on demand creation in areas where there is verifiable deployment
 - Life line link up for broadband
 - Education funds

MCNC do no harm

- MCNC does not want to move outside mission
- Tried to benefit private sector with every move
 - Local circuits
 - IRU offers
- Unique opportunity to get generation's critical infrastructure deployed in a one time capital grant
- Want to partner desperately